

presents—as one expects from Dr. van Bemmelen—many ingenious ideas, which, if not all equally valuable, are at least suggestive. Observers in tropical countries, for instance, will be interested to learn how he dealt with mosquito troubles, and how he rendered the beats of his chronometer audible during rain-storms. To those now engaged in the magnetic survey of India, the work must be one of especial interest.

The third volume describes the work done in 1906-7 by the Survey of India. Besides interesting details as to pendulum and tidal work, levelling and ordinary surveying, it gives an unusually full account of the progress of the magnetic survey under Captain Thomas, R.E. As in previous volumes, there is an account of elaborate instrumental investigations, but the most novel part is a discussion of formulæ got out by Mr. J. Eccles—acting, apparently, on a suggestion by Sir A. Rücker—for deducing the diurnal inequalities of declination and horizontal force at any intermediate place from those recorded at two magnetic observatories. There are comparisons of the inequalities observed at one magnetic observatory with those calculated for its latitude and longitude from the inequalities at two other observatories. The agreement is pronounced very satisfactory. The formulæ seem based on the assumptions that the diurnal inequality at a given latitude is a function only of the local time, and that for the area concerned the rate of variation with latitude of the departure at any local hour from the mean value for the day is constant both for the northerly and easterly components of force.

So limited a hypothesis seems hardly likely to prove very satisfactory unless confined to somewhat restricted areas, and when one looks into the observed and calculated values, especially those for the declination, one finds that, *relatively to the amplitude of the inequality*, the agreement is less satisfactory than one would have inferred from the comments made. The declination diurnal inequality, however, in India is so small that even large percentage departures from accuracy would be of minor consequence from a survey point of view.

Various prospective difficulties are referred to in connection with the distribution of magnetic storms, the difference between mean values from all and quiet days, and similar matters. The nature of the answer to several of the problems mentioned might perhaps be anticipated from what is already known from other sources; but one cannot avoid a suspicion that, unless India is singularly free from local magnetic disturbances, some of the difficulties referred to may prove to be of secondary importance. It will certainly require no small amount of knowledge and ingenuity to utilise to the full all the refinements which it is intended to introduce into the observational material.

C. CHREE.

#### BIRD NOTES.

FROM Dr. Thienemann, director of the Vogelwarte (ornithological station) at Rossitten, on the Baltic, we have received three papers relating to the recent work of that establishment. The first of these, which deals with marked storks and swallows, is an extract from Reichenow's *Ornithol. Monatsberichte* for October, 1908; the second, in which the migration of storks is discussed at some length, was originally published in *Land- und Forstwirtschaftliche Zeitung* for September; while the third, relating to marked storks in Africa, gives no clue as to its place of publication. A note on this third paper appeared in the *Times* of April 5. In connection with these, it may be mentioned that a very interesting article by Mr. A. L. Thomson on the work of the Rossitten station, and more especially the method of marking birds, is published in the April number of Witherby's *British Birds*.

As regards the capture of marked storks in Africa, reference in *NATURE* has been already made to the specimen recently killed in Natal. Dr. Thienemann now tells us of the capture, at Morija, Basutoland, of a Rossitten bird in February last. This is the most southerly point reached by a stork liberated in east Prussia, but the Natal bird, which was set free in Hungary, went further,

although the distance from the point of liberation was less. Other records include a stork, one of a brood of three marked near Königsberg in June, 1906, the ring and foot of which were brought by natives to a French officer near Lake Tchad, the bird having been snared in October of the same year on the Fittri Lagoon. A stork from a brood of three, liberated near Koslin, Pomerania, in July, 1907, was taken the following winter near Fort Jameson, Rhodesia. It is now, therefore, certain that European storks habitually migrate to South Africa, and the next point to ascertain is whether they ever breed south of the equator.

According to the *Times* of April 26, the capture of a marked stork near Jerusalem has been reported to the Hungarian Central Bureau for Ornithology, Budapest. A flock of more than 2000 storks alighted to rest by one of the lakes near Jerusalem, and five were caught. The marked bird was hatched at Egri, in eastern Hungary, last season, and marked with the stork-ring No. 293 on July 8, 1908; it will be placed in the new Palestine Museum. The storks seen were on their homeward journey, probably from South Africa. This capture is considered important as showing that these birds do not pass over the Mediterranean Sea, but follow the longer route over the land.

That the South African honey-guides (*Indicatoridae*) are parasitic in the matter of egg-laying has been long known, but it appears from a paper by the Rev. Noel Roberts in the April number of the *Journal of the South African Ornithologists' Union* that this habit is shared by certain members of the whydah-bird group (*Ploceidae*). From a paper in vol. iii., No. 1, of the same journal, it seems that this parasitic habit has been demonstrated in the case of the pied whydah-bird (*Vidua principalis*), and in the issue now before us Mr. Noel gives reasons—although these are not quite so clear or convincing as they might be—that the same holds good in the case of the typical species of the genus *Quelea*. In the author's opinion, this bird deposits its eggs, at all events in some instances, in the nests of another member of the same family, namely, *Pyromelana oryx*. It may be hoped that further investigations will be undertaken for the purpose of confirming these interesting observations.

*Naturen* for April contains a paper, by O. J. Pettersen, on the habits and distribution of the redbreast.

In the course of his annual report on Norfolk ornithology, published in the April number of the *Zoologist*, Mr. J. H. Gurney comments on the scarcity of nightingales, spotted flycatchers, willow-wrens, and various kinds of warblers during the summer of 1908. This scarcity the author attributes to the great snowfall which took place on April 23 of that year. Three features in the autumn migration were noteworthy, namely, the number of redstarts on September 23, the great flights of rooks, crows, and starlings on October 18 and 19, and the abundance of woodcock.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—An anonymous benefactor has expressed his willingness to contribute a sum of 500*l.*, if required, to supplement the 500*l.* which the Senate has already voted towards defraying the cost of the Darwin commemoration.

Prof. Woodhead has been re-appointed as the representative of the University of Cambridge on the council of the Lister Institute of Preventive Medicine.

At the Congregation on Thursday, May 13, the following Grace will be offered to the Senate:—That there be established in the University a professorship of astrophysics, and that such professorship be governed by the following rules:—(1) the professorship shall be called the professorship of astrophysics, and shall terminate with the tenure of office of the professor first elected; (2) it shall be the duty of the professor to promote by research and teaching the study of astrophysics; (3) the professor shall receive no stipend from the University; (4) the special board of studies to which the professor shall be assigned shall be the special board for physics and chemistry.

Major P. G. Craigie, C.B., will deliver the Gilbey

lectures for 1909, on the history and economics of agriculture, on May 10 and 11, at 5 p.m., in the University Chemical Laboratory, Pembroke Street. The lectures will deal largely with the sources of the cereal supply and with the agricultural history and economic position of the Russian Empire; of British India and its varying wheat exports; with the developing areas of the Argentine Republic, both as regards wheat and meat export; and will conclude with an examination of the resources and exporting prospects of the possessions of the British Crown in Australasia and in the Dominion of Canada.

LONDON.—Offices have now been definitely assigned to the Royal Commission on University Education in London, and all communications in reference thereto should in future be addressed to the joint secretaries, 12 Queen Anne's Gate, S.W.

A course of eight lectures on the "Structure and Functions of the Central Nervous System" will be given in the Physiological Institute (University College) by Dr. W. Page May on Tuesdays at 5 p.m., beginning on Tuesday, May 11. The lectures are open to all students of the University, also to qualified medical men on presentation of their cards.

OXFORD.—Much interest has been aroused by the publication of the Chancellor's letter on "Principles and Methods of University Reform." All parties seem agreed in appreciation of the fulness and lucidity of the memorandum, and of the statesmanlike qualities shown by its author. Many of Lord Curzon's proposals will be accepted in most quarters as practicable and salutary; as to others, opinions will differ. It is too soon as yet to attempt any detailed criticism of the proposed new measures, but it is satisfactory to see that Lord Curzon fully recognises the obligation that rests on the University to take its part in extending the boundaries of science. "Oxford," he says, "should train its scholars, not merely to acquire knowledge, but to increase it." The efforts of the University should be directed towards attracting, by encouragement and rewards, men who are capable of advanced and original work. Various means are suggested by which this might be done more effectually than at present, among the most important being the establishment of a system of coordination between the university and the colleges, having for its object the adoption of a general policy of research.

THE April number of the Journal of the Association of Teachers in Technical Institutions contains the programme of the Whitsuntide meeting of the association, to be held in Liverpool from May 29 to June 2. The arrangements include a visit to the R.M.S. *Mauretania*, and one to Eaton Hall. In addition to the accounts given of matters more particularly interesting to members of the society, there are useful short articles on methods of teaching in technical classes. Under the title "The Artisan's Claim to Technical Education," Mr. W. T. Emery advocates the establishment of trade schools in all our towns, believing that they would be efficient substitutes for the dying apprenticeship system. In time they would become much more, and he hoped for legislation to "limit employment under eighteen years of age to thirty hours a week, with thirty hours' technical instruction" (cf. Minority Report of the Poor Law Commission).

THE recently issued administrative report of the Missouri Botanical Garden, and an announcement of Washington University concerning the Henry Shaw School of Botany, indicate that the Shaw foundation is on the eve of entering on a much increased activity. Although Henry Shaw in 1885 endowed a school of botany in Washington University, to the head of which Prof. Trelease was called from the University of Wisconsin, the provision made was practically for only a chair of botany. Four years later, on the death of Mr. Shaw, his fortune, appraised at several million dollars, passed to the care of trustees for the maintenance of his long-established and well-known garden, and for the further development of an institution of research and instruction in botany and allied sciences, the head of the school of botany being selected as its director. It is now announced that a definite step toward the

development contemplated by the founder and planned by the director has been taken in the establishment of the post of plant physiologist at the garden, and the creation of a professorship of plant physiology and applied botany in the Shaw School of Botany, with provision for two research fellowships in botany. Dr. George T. Moore has been appointed to the new professorship.

OUR esteemed contemporary, *Engineering*, in a leading article of April 23 dealing with "Engineering and Mathematics," takes exception to our recent remarks upon the advantage of theoretical training to the artisan. The writer of this article says that every foreman and works manager will asseverate with no little emphasis the opinion that the best handicraftsmen amongst his apprentices are not generally to be found amongst those most constant in their attendance at technical classes. We agree that this, unfortunately, is too often the case, but cannot accept the writer's explanation that this is generally owing to lack of interest in theoretical principles on the part of apprentices. Any teacher who has had extended experience of evening classes will easily give the correct explanation by referring to the huge annual bundle of reasons for absence—almost invariably overtime on the part of his best students. Overtime costs money in wages at a higher rate, and inferior apprentices are not wanted for overtime; consequently the best are selected by the foreman or manager, who, being too often himself without theoretical training, has little sympathy for his apprentices' progress in this direction. We suggest that our contemporary should refer to those cases in which the works' authorities give full facilities, without compulsion, for attendance at classes, when the opinion expressed will be probably modified.

WE have received the first volume of the report of the United States Commissioner of Education, dealing with the year ended June 30, 1908. The greater part of the work (nearly 400 pages) is occupied by statistics, accompanied by running commentary. Recent progress is reviewed, not only in the United States, Porto Rico, and the Philippines, but also in the United Kingdom, in Europe, and in Spanish-American countries. We learn that the Bureau of Education has re-organised its library so as to render this collection of 150,000 educational publications available for direct service to the institutions of the country. From the commissioner's introduction we gather that the marked features of the year were the State Educational Commissions now working in ten States, the rigour of voluntary organisations, and the general effort to "standardise" American education. This is described as "the pure-food movement in our spiritual world, necessary to the soundness of our educational freedom and experimentation." International congresses were remarkably numerous last year, and the commissioner regards as the main movement in England, France, and Germany the gradual integration of the educational system. As specially characteristic of British cities, he notes the completeness with which the entire child population is brought under control, and the provision made for promoting the physical well-being of the children. He notes the growing agencies for assisting children in their search for work when their school life is ended. He considers London to be far inferior to New York in the extent of its public provision for education beyond the elementary stage. Whereas in the States the disposition is to open higher education freely to all children, the effort in England is to discover and encourage special ability.

## SOCIETIES AND ACADEMIES.

LONDON.

**Royal Society, December 10, 1908.**—"Electrolytes and Colloids. The Physical State of Gluten." By Prof. T. B. Wood and W. B. Hardy, F.R.S.

Gluten is the chief protein of wheat flour. In presence of water and salts it forms a tenacious, stringy substance, which confers upon dough its characteristic physical properties. Like other colloids, the physical state of gluten is determined by the electrolytes which are present. If the salts be washed away with ordinary distilled